October 1, 2021
TO: dockets 13-84 and 19-226, FCC
RE: Radiofrequency Exposure Limits need updating
FROM: Charyl Zehfus, WI

I submit an analysis of the official radiofrequency standards-setting documents used by FCC to set and maintain the 1996 radiofrequency/microwave exposure limits. The review reveals five key findings (within ANSI and IEEE Standards), as follows:

Summary of Key Findings (within ANSI and IEEE Standards):

- The authors understood that the mean (average) SAR value ignored "hotspots" which can be many-fold higher than the mean SAR.
- The authors were aware of the existence of "modulation-specific effects, such as efflux of calcium ions" (resulting in harmful effects on cells), but because the authors were mostly military and/or associated with corporations with a vested interest in promoting microwave radiation, they *chose*, in effect, to ignore these results.
- The authors were aware that other characteristics of the exposure such as modulation frequency and peak intensity may pose a risk to health.
- There is no 5-fold "safety level" for the general public.With the IEEE Standards, the general public's exposure was reduced 5-fold compared to electrical workers. However, the allowed averaging time was increased 5-fold for the general public compared to electrical workers and the end result was that the *the total allowed absorbed radiation is identical*. In effect this change negates the so-called 5-fold "safety level" for the general public.

My comment points:

1. It is unacceptable that an individual or room of people could unwittingly spend hours in a RF "hotspot."

2. It is unacceptable that the general public may get as much total exposure as radiofrequency workers.

3. It is important that some page in the 11,000 pages of current science in the lawsuit reveal THE SAME HARMFUL HEALTH EFFECTS ACKNOWLEDGED decades ago by these military/industry standards setters.

4. If FCC reads its own standards documents, it knows about these health effects – specific concerns, such as damage of calcium movement inside of body cells, damage to blood brain barrier, and health effects from the modulations and pulses from signals. Yet it continues to deny any health effects on its website.

I am submitting the FCC's standards documents as proof that it knows about the non-thermal health effects. If FCC denies that the standard document setters were correct in revealing harmful effects, then what faith could they possibly have in the exposure limits taken from these very documents?

https://ehtrust.org/policy/outdated-ansi-and-ieee-standards/

Outdated ANSI and IEEE Standards: Introduction

More than four years ago the World Health Organization's (WHO) International Agency for Research on Cancer (IARC) declared cellphone radiation is a Group 2B (possible) Human Carcinogen substantially based on scientific studies which found statistically significant risks of brain cancer and a hearing never tumor called an acoustic neuroma.

An industry consultant's response: "Dr. Meir J. Stampfer, a professor at the Harvard School of Public Health and a consultant to the cellphone industry. 'In science, unlike math, we can't have absolute certainty, but in the scheme of things, this is not a health risk I would be concerned about at all.'" [NY Times, June 6, 2011]

In 1985 the United States government adopted an exposure limit from the American National Standards Institute (ANSI-an industry & military organization), ANSI C95.1-1982 Exposure Limit Standard. In 1996 the U.S. government adopted (updated from the ANSI Standard) the IEEE C95.1-1991 Exposure Limit Standard. IEEE, the Institute of Electrical and Electronic Engineers is substantially an industry and military organization.

https://ehtrust.org/wp-content/uploads/2016-ANSIandIEEEStandardsUSExposuresLimitsAHistoryofTheirCreationbyLloydMorganEHTwebsite.pdf